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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,010	12/12/2003	Myoungho Lim	9587-0004/LGC-0003	2348

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EXAMINER

BERHANU, SAMUEL

ART UNIT	PAPER NUMBER
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2838

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/735,010

Applicant(s)

LIM ET AL.

Examiner

Samuel Berhanu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "Optically isolated field-effect transistor" in claim 2, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Morita (US 5,705,914).

Regarding claims 1 and 19, Morita discloses in Figure 3 a method for managing a battery system comprising: using a solid state relay as a switch (5a, 5b, 5c, 5n) during an operation of said battery system.

Regarding claims 2 and 20, wherein said solid state relay is an optically isolated field-effect transistor (5a, 5b, 5c, 5n, Column 6, lines 44-48).

4. Claims 1, 3, 6, 19, 21 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Kitahara et al. (US 6,121,752).

Regarding claims 1 and 19, Kitahara disclose in Figures 1 and 2 a method for managing a battery system comprising: using a solid state relay as a switch (A1,B1,A2, B2,A3,B3) during an operation of said battery system.

Regarding claims 3 and 21, Kitahara et al. disclose in Figures 1 and 2 wherein said operation is a read and wherein said switch completes a circuit comprising: a side of a battery cell (30a, V2, 30b, V3, 30c, V4, 30d, V5), and an input of a voltage differentiator (422a, 422b, 422c) (Column 7, lines 4-22).

Regarding claims 6 and 24, Kitahara et al. disclose a controlling said battery system using a logic circuit (Figure 9, element 451, Column 15, lines 30-32).

5. Claims 1, 4-5, 19 and 22- 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Stuart (US 5,844,399).

Regarding claims 1 and 19, Stuart discloses in Figures 1 and 5 a method for managing a battery system comprising: using a solid state relay as a switch (Q1, Q2) during an operation of said battery system.

Regarding claims 4 and 22, wherein said operation is a buck (13) and wherein said switch (Q20) completes a circuit comprising: a first side of a battery cell (+) and; a resistor (2Ω); and a second side of a battery cell (-) (Column 4, lines 22-38).

Regarding claims 5 and 23, wherein said operation is a boost (12) and wherein said switch (Q1) completes a circuit comprising: a side of a battery cell (15); and a voltage source (VS) (Column 4, lines 39-46).

6. Claims 1, 7-8, 19 and 25-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Richards et al. (US 6,215,282).

Regarding claims 1 and 19, Richards et al. disclose in Figure 1 a method for managing a battery system comprising: using a solid state relay as a switch (150) during an operation of said battery system (110).

Regarding claims 7 and 25, a controlling said battery (110) system using an EPROM (Column 5, lines 40-44).

Regarding claims 8 and 26, controlling said battery system using a programmable logic array (column 5, lines 2-4).

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7. Claims 1, 9, 19 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakurai (US 6,340,889).

Regarding claims 1 and 19, Sakurai discloses in Figures 1 and 2 a method for managing a battery system comprising: using a solid state relay as a switch (12,13) during an operation of said battery system.

Regarding claim 9, Sakurai discloses, wherein a control circuit (6) that controls said switch (12,13) protected from a higher voltage circuit (15,17) wherein said switch is a component of said high voltage circuit (Column 5, lines 31-63).

Regarding claim 27, Sakurai discloses a control circuit (6) configured to control said solid state relay (12,13) wherein said control circuit is protected from a higher voltage circuit and wherein said solid state relay is a component of said higher voltage circuit (Column 5, lines 31-63).

8. Claims 10,12-14, 17, 28, 30-32 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Ruhling (US 5,469,042).

Regarding claims 10 and 28, a method of managing a battery system comprising: providing a first rail (26, positive terminal); and providing a second rail (26, negative terminal).

Regarding claim 12, partitioning a first battery cell into a first battery group (20); partitioning a second battery cell into a second battery group (20) wherein said second battery cell is in series with said first battery cell (Each accumulators are in series with each other) and wherein a first side of said first battery cell is electrically connected to a

first side of said second battery cell; and accessing said first side of said first battery cell (24) and a second side of said first battery cell using said first rail (25)

Regarding claim 13 accessing said first side of said second battery cell (20) and a second side of said second battery cell using said second rail (26, positive terminal).

Regarding claims 14 and 32, A battery management system comprising: a partitioning unit configured to partition a plurality of battery cells (20) into a plurality of battery cell groups (20); a control unit configured to control battery management functions of a first battery a cell group using a battery management control module (21).

Regarding claims 17 and 35, wherein four battery management control modules (21) are used to control battery management functions of four battery cell groups.

Regarding claim 30, a partitioning unit configured to partition a first battery cell into a first battery group (20) wherein said partitioning unit is further configured to partition a second battery cell into a second battery group (20) wherein said second battery cell is in series with said first battery cell (each accumulators are in series with each other) and wherein a first side of said first battery cell is electrically connected to a first side of said second battery cell (24, 25); and a control unit configured to access said first side of said first battery cell and a second side of said first battery cell using said first rail (25).

Regarding claim 31, a second control (21) configured to access said first side of said second battery cell (25) and a second side of said second battery cell (24) using said second rail (27).

9. Claims 10, 11, 28 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawashima (US 6,459,236).

Regarding claims 10 and 28, Kawashima discloses in Figure 3 a method of managing a battery system comprising: providing a first rail (Positive and Negative terminal of CE1); and providing a second rail (Positive and Negative terminal of CE2).

Regarding claims 11 and 29, providing a first switch (S11) connected to a high line of said first rail (positive terminal of CE1); providing a second switch (S21) connected to a low line of said first rail (negative terminal of CE1) providing a third switch (S12) connected to a high line of said second rail (positive terminal of CE2); and providing a fourth switch (S31) connected to a low line of said second rail (negative terminal of CE2).

10. Claims 14-16, 18, 32, 33, 34 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Ouwerkerk (US 5,498,950).

Regarding claim 14 and 32, Ouwerkerk discloses in Figure 2 a battery management system comprising: a partitioning unit configured to partition a plurality of battery cells (12) into a plurality of battery cell groups (12); a control unit configured to control battery management functions of a first battery a cell group using a battery management control module (14).

Regarding claims 15 and 33, a battery management control module is controlled by a 16-bit control input (11, column 3, lines 39-49)

Regarding claims 16, and 34, the battery management system of claim 32 wherein said battery management control module is controlled by a 8-bit control input (11, column 3, lines 39-49)

Regarding claim 18 and 32, the battery management system of claim 32 wherein a first battery cell group has ten battery cells (column 5, lines 19-23).

Conclusion

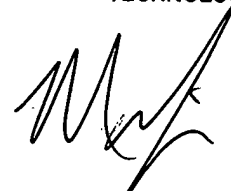
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Berhanu whose telephone number is 571-272-8430. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SB

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5/13/05